

REMARKS

The 22 May 2003 official action addressed claims 1-58. Claims 1-3, 6, 15-17, 20, 29-30, 39, 44-45 and 54 are amended. New claims 59-72 and 73-86 are added. Claims 1-86 are pending.

The indication of allowability for claims 9-14, 23-28, 32-33 and 47-48 is noted with appreciation.

Information disclosure

Submitted herewith is an information disclosure that provides copies of references known to the applicants that are believed to be relevant to the present claims, in that they involve subject matter in the same fields. These references are discussed in the remarks below.

1. Overview of amendmentsSpecification amendment

The specification is amended to supply the serial numbers of related applications that were not known at the time of filing of the present application. No new matter is added.

Claim amendments

Independent claims 1, 15, 29 and 44 are amended to clarify the manner in which the subject matter of programming events is described. Namely, the claims are amended to specify that programming events are described by assigning scores to categories are arranged in a hierarchy that has top level categories, first level sub-categories that are within the top level categories, and second level sub-categories that are within the first level sub-categories (while the claims require at least two levels of sub-categories, more levels of sub-categories could be used). An example of a hierarchy is illustrated in Figure 8 and the claim language is intended to describe the top three levels of the hierarchy of Figure 8. Claims 1, 15, 29 and 44 are further amended to clarify that viewer profiles, which describe the type of programs that a viewer enjoys,

utilize a corresponding category hierarchy structure. Further discussion of these features is provided below.

Claims 2, 3, 16, 17, 30 and 45 are amended editorially.

Claims 6 and 20 are amended to omit language referring to particular scores and to describe a ranking process more generally.

New claims 59-72 describe producing an alert that alerts a viewer to the availability of a programming event, with emphasis on the content of the alert. These claims are related to original claims 29-58.

New claims 73-86 describe producing an alert that alerts a viewer to the availability of a program segment based on processing of metadata that describes an individual program segment. These claims are related to original claims 29-58.

No new matter is added.

2. Response to objections and rejections

Claim objections

The claim objections have been corrected in the suggested manner.

Prior art rejections

The rejected claims were rejected as being anticipated by Herz (U.S. 6,088,722) or obvious over Herz in view of Alexander (U.S. 6,177,931). Applicants believe that the claims contain features that are not found in the cited references. The following discussion explains applicants' basis for this belief.

Claims 1-28

Claims 1-28 address a way for determining whether a viewer will like a programming event. The invention of claims 1-28 would typically be implemented in a viewer's set-top box to identify programs that the viewer will like. However, it could also be implemented in a server that transmits

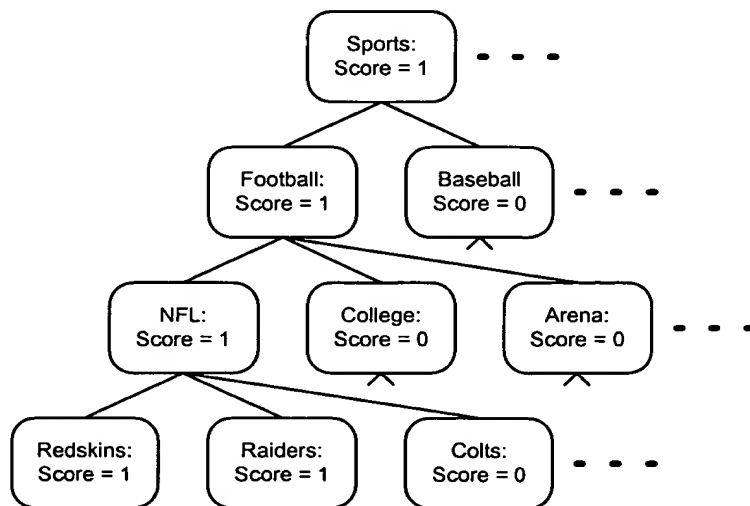
customized content to the viewer (e.g. a customized video channel). Therefore applicants have not limited these claims to a set-top box implementation.

To determine whether a viewer will like a programming event, two things are required: information that describes the programming event, and information that describes the type of programs that the viewer likes. From those two sets of information it can be determined whether the viewer will like a particular programming event.

A distinguishing feature of claims 1-28 is the particular way in which the metadata for a programming event describes the subject matter of the programming event. Independent claims 1 and 15 specify that the metadata that describes a programming event includes:

goodness of fit scores associated with respective categories..., wherein the categories are arranged in a hierarchy comprising at least a set of top-level categories, respective sets of first level sub-categories each corresponding to and encompassed by a top level category, and respective sets of second level sub-categories each corresponding to and encompassed by a first level sub-category...

In other words, the subject matter of the programming event is described by assigning "goodness of fit" scores to categories that are arranged in a hierarchy having at least three levels. The following is an illustration of the category data contained in metadata for an NFL football game between the Redskins and the Raiders:



This illustration shows four levels of categories arranged in a hierarchy in which a top level category (sports) encompasses first level sub-categories (football, baseball etc.), first level sub-categories (e.g. football) encompass second level sub-categories (NFL, college, arena etc.), and so on. As stated in the claims, there are multiple top level categories, each topping its own branch of the hierarchy (see, e.g., Figure 8 of the application). As indicated in the illustration, the hierarchy contains many more categories. In other words, what is shown is the relevant subset of a larger predefined hierarchy that would be used for categorizing any type programming event.

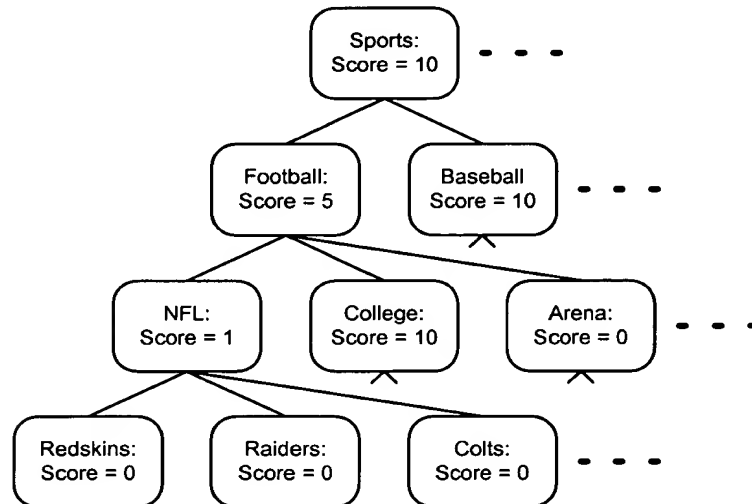
The illustration further shows "goodness of fit" scores associated with categories (e.g. football = 1, baseball = 0). Although this illustration shows a binary scoring system using 1 and 0 as scores, other implementations can use other types of scoring (e.g. scores from 1- 10).

As stated in claims 1 and 15, the metadata for a programming event describes a programming event by providing scores corresponding to categories of the hierarchy. In other words, the metadata for a programming event indicates how applicable categories of the predefined hierarchy are to the programming event. This manner of representing the subject matter of a programming event is very powerful, because it provides a significant amount of detail about the programming event, while also doing so in a highly structured manner that enables sophisticated decision making based on that information.

To use the metadata as described above requires knowledge of the viewer's own preferences as they relate to the categories of the same predefined hierarchy. Claims 1 and 15 specify that the data of a viewer profile includes:

preference scores associated with categories of the classification hierarchy...

In other words, the viewer indicates his preferences for subject matter described by each of the categories of the hierarchy. The following is an illustration of data contained in a viewer profile for a sports fan who prefers baseball to football:



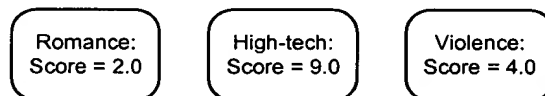
This information shows that the viewer has a much higher preference for baseball than for football, and further shows that the viewer has a much higher preference for college football than for NFL football. It can be seen by comparison of the two illustrations above that this viewer would not be particularly interested in the Redskins/Raiders programming event, as evidenced by comparison of the category goodness of fit scores for the programming event with the viewer's preference scores for those same categories.

Independent claims 1 and 15 involve using metadata as shown above and viewer profile data as shown above to determine which programming events a viewer will prefer. In particular, claims 1 and 15 involve the process of ranking the programming events based on the preferences expressed in one or more viewer profiles (leaving open the possibility that multiple viewer profiles for multiple viewers are used to determine the programming event that will best satisfy a group of viewers). In other words, where there is metadata available for multiple programming events (e.g. all programming events available in the next two weeks), a ranking can be produced that indicates relative desirability among programming events using the metadata and the viewer profiles. The

remaining claims dependent from claims 1 and 15 describe additional features, such as how this type of ranking is integrated with ranking based on keyword matching.

The cited references are not believed to teach what is claimed. The Herz reference also involves a system that determines which programs are most preferred by viewers, and to do so Herz uses information about the programs and information about the viewers' preferences. However, the information that Herz uses to describe programs and viewer preferences is different than what is claimed here.

Herz refers to the information that describes a programming event as a "content profile," and refers to information that describes a viewer's preferences as a "customer profile" (col. 11, lines 41-44). Each of these profiles describes content or preferences using an "array of characteristics," in other words, a list of characteristics of the programming event. Herz teaches that the characteristics that are used should be non-overlapping (insert at col. 11, line 55), and describes a programming event in terms of a list of non-overlapping characteristics with corresponding scores, such as the sample content profiles shown at col. 21, lines 54-67. For example, the following is an illustration of a sample content profile provided by Herz at col. 21:



Comparison of this illustration with the illustrations above highlights a basic distinction: Herz uses a simple list of characteristics, with no sub-categories that are encompassed by higher level categories and thus no hierarchical category structure. Herz teaches that the categories should be non-overlapping and constrains their form to a simple list, whereas claims 1 and 15 require the use of multiple levels of categories, with the categories at one level encompassing more specific sub-categories of a lower level. Since Herz does not teach the manner of describing programming events and viewer preferences required by claims 1 and 15, it is believed that claims 1 and 15 and their dependent claims are allowable over Herz.

Claims 29-58:

These claims relate to the creation of a schedule of alerts that are provided to a viewer to alert the viewer regarding programming events of interest. A characterizing feature of independent claims 29 and 44 is that the alert schedule is generated through the use of metadata and viewer profiles that utilize a hierarchical category structure for representing the subject matter of programming events and desired programming, as described above. Claims 29 and 44 were rejected as being anticipated by Herz, however it is believed that the distinctions with respect to Herz have now been clarified and so independent claims 29 and 44 and their dependent claims are believed to be allowable over Herz.

New claims 59-72:

Claims 59-72 are related to claims 29-58, in that they involve providing an alert to a viewer regarding a programming event that has been determined to be of interest to the viewer. Independent claims 59 and 66 recite features that are believed to underlie the indication of allowability provided for claims 32-33 and 47-48, namely that the contents of the alert include a category or a keyword from the metadata of the programming event for which the alert is generated. The official action cited Herz at col. 23, lines 51-55 as displaying an alert to a viewer regarding programs of interest, however Herz has no teaching of displaying a category or keyword from the metadata for the programming event in the alert. The official action also cites Alexander's Figure 3 as showing an alert, however it can be seen in that figure that the displayed information does not include a category or key word from the metadata from the programming event. Hanafee, which is provided in an information disclosure submitted herewith, shows an alert banner (e.g. Figure 3) that provides information about current or future programming, but the alert banner does not include a category or keyword from metadata for the programming event. Therefore independent claims 59 and 66 and their dependent claims are believed to be allowable.

New claims 73-86:

Claims 73-86 are related to claims 29-58, in that they involve providing an alert to a viewer regarding a programming event that has been determined to be of interest to the viewer. Claims 73-86 are specific to the case where programming event metadata is provided for individual segments of programs, and alerts are provided for individual segments of programs. The cited Herz and Alexander references do not involve the use of metadata for individual segments of programs, and so claims 73-86 are allowable over these references.

It is noted that Hullinger (U.S. 6,295,092), provided in the information disclosure submitted herewith, involves the creation of data that describes individual segments of programs, however this data is not sent to devices for use in generating alerts, and there is no suggestion of its use for this purpose.

It is further noted that Logan (U.S. 2002/0120925), provided in the information disclosure submitted herewith, involves the use of metadata for segments of programming events. However, Logan uses segment metadata for providing customized content to viewers, in the form of a customized channel or a "playlist" determined in accordance with user preferences, and does not teach or suggest using segment metadata to provide alerts for individual segments or to generate a schedule for providing alerts regarding individual program segments.

Therefore independent claims 73 and 80 and their dependent claims are believed to be allowable.

The foregoing amendments and remarks address all bases for objection and rejection and are believed to place the case in condition for allowance. The examiner is invited to contact the undersigned to resolve any remaining issues.

Respectfully submitted,

Date: August 13, 2003
FOLEY & LARDNER
2029 Century Park East, 35th Floor
Los Angeles, CA 90067
Voice (310) 277 2223
Fax (310) 557 8475

By 

Ronald Coslick
Attorney for Applicant
Registration No. 36,489